# ANNUAL SUBSIDENCE REPORT
# PLATEAU MINING COMPANY
# 1983

## SUMMARY

In September 1983, a visual survey of surface effects of subsidence was initiated. All mined areas were surveyed, with particular attention given to areas where pillars have been pulled. Plate 12-2, Sheets 1,2,3 and 4 of 4 show Plateau's lease area with subsidence effects.

To date, all surface subsidence has occurred on the eastern portion of Plateau's Permit Area. This area is characterized by very steep, narrow ridges running south and north from the main east-west ridge. Overburden ranges from 0 to 600 feet with the surface effects occurring anywhere in this overburden range. The majority of the effects have occurred where the overburden is 300 feet or less. No new effects could be identified in this survey.

Where overburden is greater than 600 feet, no effects have been found. Substantial areas under greater cover have been development mined (room and pillar) in the past two years. No surface effects have been found over development mining. There are five areas where pillars have been pulled in 1982-1983 as shown on Plate 12-2, Sheets 1,2 and 3 of 4. Of these, no surface effects were found.

## SURFACE EFFECTS

Surface effects consist of tension cracks both parallel with the slope and at a diagonal, holes and one area that slumped. Cracks range in width from a few inches to 3 feet. Holes range from 2 feet to 10 feet in diameter. Cross sections A-A and B-B on Plate I give typical details of two areas as shown on Plate 12-2, Sheet 1 of 4.

Because the areas where subsidence has occurred are located over previously mined areas, and there was no monumentation prior to mining, it is impossible to draw any meaningful data from these areas. However, where the overburden is over

600 feet, there has been no subsidence.

There is considerable evidence that the soil displacements are healing themselves, the older the cracks, the more healing is evident. Soil at the edges of the displacements is migrating into the crack seeking the angle of repose, refer to Section A-A and Photograph No. 7. More photographs and site measurements to document healing processes will be taken in 1984.

## VEGETATION

There appears to be little or no effect on vegetation from subsidence. Grasses, shrubs and trees at the edge of displacements show no adverse effects, and in some cases, appear to be doing very well; possibly due to added water penetration to their root systems.

## SURFACE AND GROUNDWATER

Numerous small drainage channels are intercepted by displacements, but no adverse erosion is occurring. Undoubtedly, some interruption of surface drainage is occurring, but as the drainages only have flows from thunderstorms and snowmelt, this effect is negligible.

There are no perennial streams in the areas mined or to be mined within Plateau's permit boundary.

## SURFACE STRUCTURES

A TV tower, one small cabin, a Plateau owned powerline, drift fences and unpaved Forest Service roads are the only structures existing on the permit area above mining areas.

There have been no effects to any structures due to subsidence.

PROJECTED MINING

Current mining operations are being conducted in Leases SL-031286, U-37045 and 22729.

A longwall mining system is being installed in Lease SL-031286 and will be operational by the end of April, 1984. Longwall mining was addressed in Volume I, Chapter 3, Sections 3.4.1.1, 3.4.1.3, 3.4.1.4, 3.4.1.5, 3.4.3, 3.4.3.2 and 3.4.3.2.3 of Plateau's Mining and Reclamation Plan. Approximately 50 percent of this lease will be mined with the longwall system, with support and development mining by continuous miners.

MONITORING

The Forest Service monitoring plan, as outlined in Volume I, Chapter 3, Section 3.5.8.3 of Plateau's Mining and Reclamation Plan, was conducted in 1983 whereby aerial photography was taken for evaluation of subsidence effects. There is no subsidence on National Forest ground.

Subsidence monitoring baselines were established in 1983, as shown on Plate 12-2, Sheets 3 and 4 of 4. State Plane System Coordinates with elevations are shown on Table I. These baselines will be monitored yearly for horizontal and vertical location.

The baselines are tied into an extensive monument system used for the Forest Service Photogrammetry Program.

The monitoring baselines are located over the first longwall panel, barrier and main development panels.

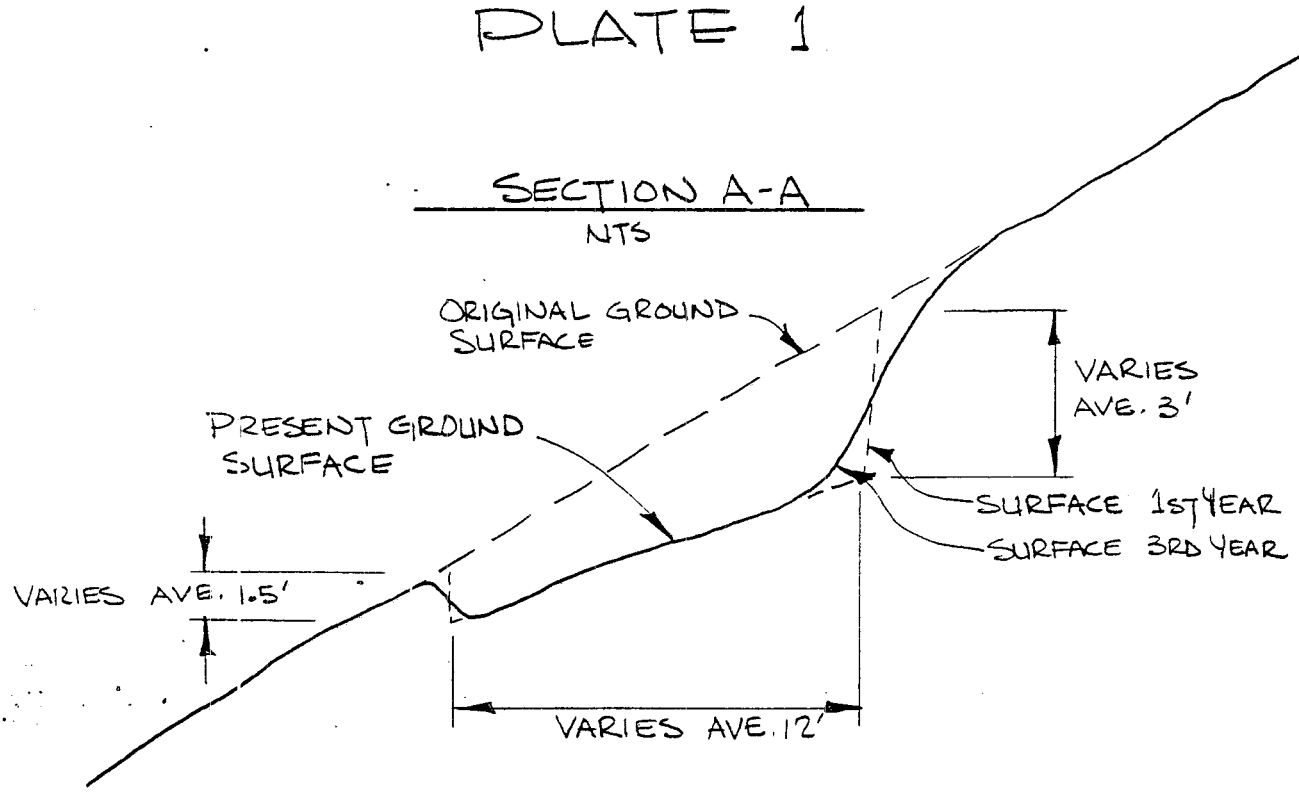
TABLE I

LONGWALL SUBSIDENCE MONITORING BASE LINE

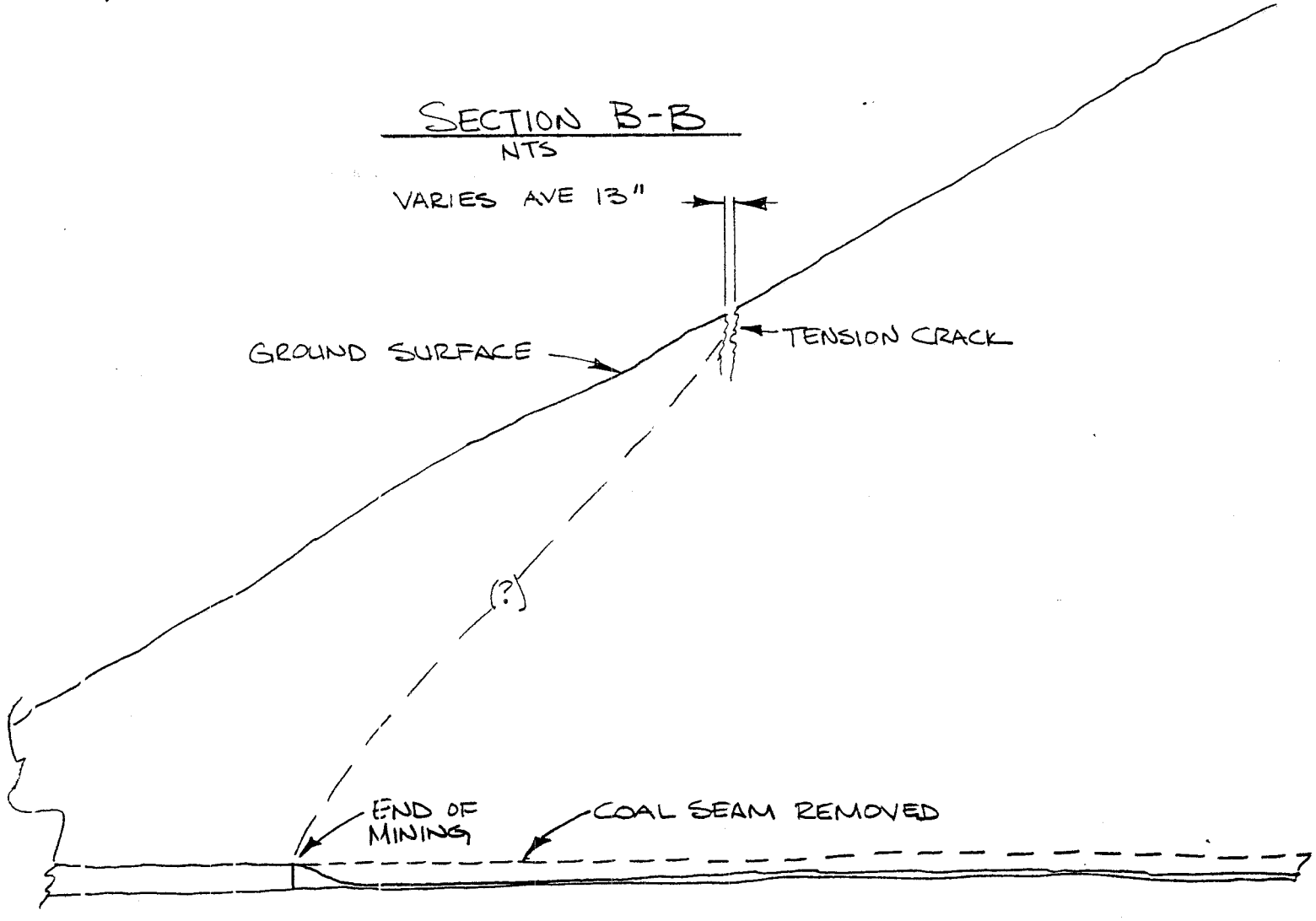
| MONUMENT | NORTHING | EASTING | ELEVATION |
|---|---|---|---|
| P87 | 433377.87 | 2115969.54 | 10075.98 |
| P89 | 433279.50 | 2118900.20 | 9953.16 |
| P90 | 433322.15 | 2118381.30 | 10000.23 |
| P91 | 433367.44 | 2117857.35 | 10047.51 |
| P92 | 433215.75 | 2117592.48 | 10076.94 |
| P93 | 433174.34 | 2117303.05 | 10089.10 |
| P94 | 433159.29 | 2116992.10 | 10088.26 |
| P95 | 433275.59 | 2116613.14 | 10095.92 |
| P96 | 433200.11 | 2116197.77 | 10071.48 |
| P97 | 433261.30 | 2115811.27 | 10052.24 |
| P98 | 433094.13 | 2115380.23 | 9982.65 |
| P99 | 433090.97 | 2114905.63 | 9907.48 |
| P100 | 433058.92 | 2113995.94 | 9855.00 |
| P101 | 433219.89 | 2113420.63 | 9022.92 |
| P103 | 432285.24 | 2115934.01 | 9962.86 |
| P105 | 432757.42 | 2116369.21 | 10033.12 |
| P106 | 434197.07 | 2116030.20 | 10118.79 |
| P107 | 433699.15 | 2116242.14 | 10125.68 |
| P108 | 431717.56 | 2116265.11 | 9946.57 |
| P109 | 431353.37 | 2116376.21 | 9951.97 |
| P111 | 435011.56 | 2116019.08 | 10136.52 |

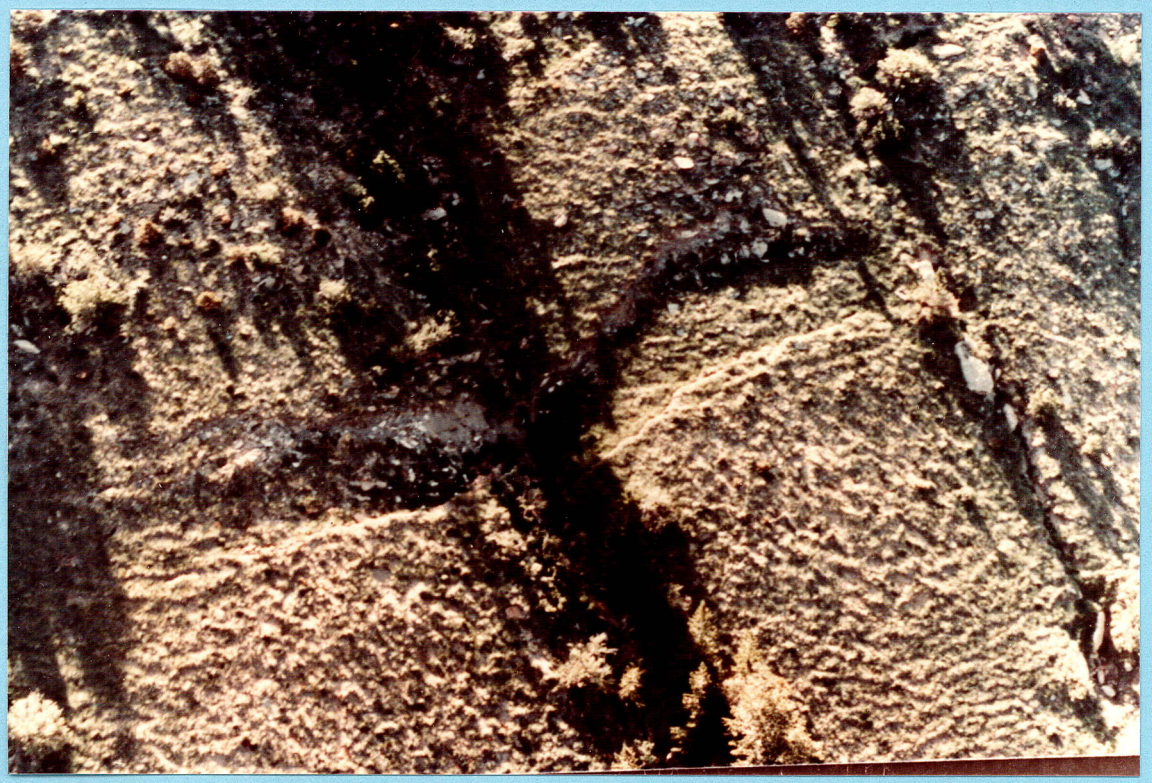
# PLATE 1

## SECTION A-A
NTS




## SECTION B-B
NTS





No. 7

No. 6

No. 8

No. 13

No. 5A

No. 3A